

REMARKS

Claims 17 - 31 are currently pending. Original Claims 1-16 are now cancelled.

Applicants believe that the new set of Claims 17-32 overcome the Examiner's "claim objections" set forth in item No. 1 on page 2 of the Official Action.

With regard to the rejection under 35 U.S.C. §112 (1st ¶), Applicants contend that the term "Ethernet physics" is understood by those skilled in the art to mean the physical data transmission technology of the known ETHERNET Standard. This physical data transmission technology includes components like 4-lead copper cable and/or 2-conductor light wave guide, plugs or line driver components. The Ethernet Standard data transmission system is sufficiently well known in office technology. Using Ethernet physics, according to the invention a process of real time communication between several subscribers is now to be specified.

However, to improve the clarity of the claimed invention, Claims 17-31 are submitted herewith, as a basis for further examination proceedings. The new Claim 17 corresponds in essence to a combination of the old Claims 1 and 6. Inasmuch as the process of real time communication according to the invention is a master communication, i.e., subscribers do not converse with one another, but each slave unit communicates with the master unit, the designation of the method has been clarified. For this reason, all subsidiary Claims 18-28 have been amended on the input side. The new Claims 18-28 correspond to the previous Claims 2-12, but have been revised editorially. The new Claims 29-31 correspond to the old Claims 13, 14 and 16. No new matter has been introduced by the introduction of new Claims 17-31.

With regard to the rejection under 35 U.S.C. §112 (2nd ¶), as set forth in item No. 4 on page 3 of the Official Action, Applicants believe that the new claims overcome the Examiner's concerns.

On the merits, the Examiner has rejected old Claims 1-4, 6-8 and 14 (now believed to be most nearly Claims 17-20, 22-24, and 30) under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,215,797 B1 (Fellman). The arguments advanced in support of this rejection are discussed in item No. 6 on pages 4-6 of the Official Action, and not herein repeated.

Further, the Examiner has rejected Claim 15 under 35 U.S.C. §103(a) as obvious over Fellman in view of U.S. Patent No. 5,544,314 (Fuchstreiter et al.). The argument in support of this rejection is discussed in item No. 8 on page 7 of the Official Action, and not herein repeated. There is now no new claim that corresponds to the old claim 15.

Applicants respectfully traverse all outstanding grounds for rejection, which are believed to be overcome by the new submitted claims in combination with the remarks herein below.

Applicants acknowledge the conditional allowability of Claims 5, 9-11, and 16, i.e. new Claims 21, 25-27, and 31.

The subject of US 6,215,797 B1 (Fellman et al) relates to a method of transmitting time-critical signals in real time by way of an Ethernet network. For that purpose, each total cycle ("frame") is subdivided into several time intervals ("phases").

Here a time interval is assigned to each network subscriber. Only during a time interval assigned to a network subscriber can said subscriber transmit one or more data packs. Furthermore, each total cycle beat ("frame") at the end comprises a time interval of the conventional access process CSMA/CD (Carrier Sense Multiple Access / Collision Detect) of the Ethernet Standard.

This combination was chosen for the network in Fellman et al because real-time-capable and -non-capable devices (network subscribers) are connected to the network. In order for these real-time-capable devices in the Ethernet network to be able to communicate with each other, time intervals, referred to as "time slots," are assigned to them. This avoids the occurrence of collisions in the Ethernet network. In order for each network subscriber to be able to transmit data packs only at his assigned time interval, an adapter is arranged between each network subscriber and a network connection. The subdivision of the total cycle beat ("frame") into several time intervals corresponding to the number of subscribers connected, a "Guard Phase" time interval and a "Free Access" time interval is made by a Master, arranged, for example, at a network node. Otherwise, the Master has nothing more to do with the communication, since the network participants communicate with each other.

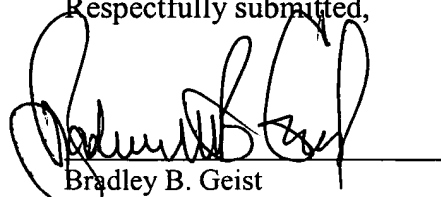
According to the method of the present invention, (the course of which is illustrated in Fig. 3 with corresponding text), each subscriber is fixedly assigned a time to transmit a telegram and a time to receive a telegram. Thus each total cycle beat comprises several points in time at which the Master Unit or a slave unit may transmit or

receive. Through these predetermined points in time within a total cycle beat, a communications network with deterministic time behavior is obtained. Since each subscriber may communicate only in the time slots assigned to him, there is no longer any danger of collision. Of the Ethernet Standard, only the components (plugs, line driver components) for physical Ethernet signal transmission are employed. That is, only the physical plane (layer 1) is taken over from the Standard. Accordingly, the method according to the invention is a real-time master-slave communication having components for physical Ethernet signal transfer. The Fellman et al reference does not disclose a method of real time communication according to pending Claim 17.

Since there is now no new claim which corresponds to old Claim 14, Applicants do not believe any remarks are necessary in connection with the §103(a) rejection of old Claim 15.

Applicants respectfully request consideration of the new pending Claims 17-31.

Respectfully submitted,



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